

PTO/SB/08A (10-01)

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Substitute for form 1449A/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/922,974 - 1442		
		Filing Date	August 6, 2001		
		First Named Inventor	Theodore M. Bloomstein et al		
		Art Unit	1752 - 1752		
		Examiner Name	Not Yet Assigned SAC, HR		
Sheet	1	of	3	Attorney Docket Number	101328-159

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
LS	A	4,575,330	03/11/1986	Hull	

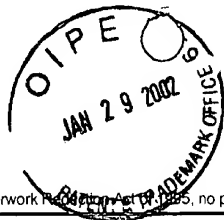
FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
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¹ Applicant's unique citation designation number (optional). ² See attached Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS						
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published				T ²
LS	B	J.M. MORAN AND D. MAYDAN, "High Resolution, Steep Profile Resist Patterns," <i>J. Vac. Sci. Technol.</i> 16 (6):1620-1624(1979).				TC 1700
LS	C	M. HATZAKIS, "PMMA Copolymers as High Sensitivity Electron Resists," <i>J. Vac. Sci. Technol.</i> , 16 (6):1984-1988(1979).				
LS	D	C.W. WILKINS, JR., E. REICHMANIS, T.M. WOLF, AND B.C. SMITH, "An Organosilicon Novolac Resin for Multilevel Resist Applications," <i>J. Vac. Sci. Technol. B</i> 3 (1):306-309(1985).				
LS	E	L.F. HALLE, "A Water Soluble Contrast Enhancement Layer," <i>J. Vac. Sci. Technol. B</i> 3 (1):323-326 (Jan/Feb 1985).				
LS	F	E.K. PAVELCHEK, V.B. VALENTY, AND R.E. WILLIAMS, JR., "Application of a Contrast Enhancement Material to Broadband Projection Printing," <i>SPIE</i> 538 :78-85(1985).				
LS	G	P.R. WEST, G.C. DAVIS, AND B.F. GRIFFING, "Contrast Enhanced Photolithography: Application of Photobleaching Processes in Microlithography," <i>J. of Imag. Sci.</i> 30 (2):65-68(March/April 1986).				
LS	H	A.W. MCCULLOUGH, D.A. VIDUSEK, M.W. LEGENZA, M. DE GRANDPRE, AND J. IMHOF, "Polydimethylglutarimide (PMGI) Resist- A Progress Report", <i>SPIE</i> 631 :316-320(1986).				
LS	I	M.J. ROOKS, S. WIND, P. MCEUEN, AND D.E. PROBER, "Fabrication of 30-nm-scale Structures for Electron Transport Studies Using a Polymethylmethacrylate Bilyer Resist," <i>J. Vac. Sci. Technol. B</i> 5 :318-321(1987).				
LS	J	B.F. HAFNER, "Optical Pattern Generator Using Excimer Laser," <i>SPIE</i> 922 : 417-423(1988).				
LS	K	W. BRUNSVOLD, C. LYONS, W. CONLEY, D. CROCKATT, M. SKINNER, AND A. UPTMOR, "Advanced Bilayer resist Process with Optimized PMGI Formulation," <i>SPIE</i> 1086 :289-299 (1989).				
LS	L	T. TANAKA, N. HASEGAWA, H. SHIRAIASHI, AND S. OKAZAKI, "A New Photolithography Technique with Antireflective Coating on Resist: ARCOR," <i>J. Electrochem. Soc.</i> 137 (12):3900-3904 (1990).				
LS	M	M. SEBALD, J. BERTHOLD, M. BEYER, R. LEUSCHNER, CH. NOLSHER, U. SCHELER, R. SEZI, H. AHNE, AND S. BIRKLE, "Application of the Si-CARL Bilayer Process," <i>SPIE</i> 1466 :227-237(1991).				
LS	N	C.F. LYONS, R.K. LEIDY, AND G.B. SMITH, "Practicing the Top Antireflector Process," <i>SPIE</i> 1674 :523-531(1992).				
LS	O	M. GEHM, P. JAENEN, V.V. DRIESSCHE, A.-M. GOETHALS, N. SAMARAKONE, L.V. DEN HOVE, B. DENTURCK, "Evaluation of Methods to Reduce Linewidth Variation Due to Topography for I-line and Deep UV Lithography," <i>SPIE</i> 1674 :681-700(1992).				

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INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	2	of	3	Attorney Docket Number	101328-159
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Complete if Known

Application Number	09/922,974 - 1442
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First Named Inventor	Theodore M. Bloomstein et al
Group Art Unit	1752-1750
Examiner Name	Not Yet Assigned SAGWIL
Attorney Docket Number	101328-159

10	P	A.B. FRAZIER AND M.G. ALLEN, "Metallic Microstructures Fabricated Using Photosensitive Polyimide Electroplating Molds," <i>J. of Microelectromechanical Systems</i> 2(2):87-94(1993).	TC 170C	
10	Q	H. GUCKEL, K.J. SKROBIS, J. KELIN, AND T.R. CHRISTENSON, "Micromechanics Via X-ray Assisted Processing," <i>J. Vac. Sci. Technol. A</i> 12(4):2559-2564(1994).		
10	R	B. LOCHEL, A. MACIOSSEK, M. KONIG, H.J. QUENZER, AND H.-L. HUBER, "Galvanoplated 3D Structures for Micro Systems," <i>Microelectronic Engineering</i> 23:455-459(1994).		
10	S	B. LOCHEL, A. MACIOSSEK, M. ROTHE, AND W. WINDBRACKE, "Microcoils Fabricated by UV Depth Lithography and Galvanoplatin," <i>Sensors and Actuators A</i> 54:663-668(1996).		
10	T	K. IKUTA, K. HIROWATARI, T. OGATA, "Three Dimensional Micro Integrated Fluid Systems (MIFS) Fabricated by Stereo Lithography," <i>Proceedings IEEE Micro Electro Mechanical Systems. An Investigation of Micro Structures, Sensors, Actuators, Machines and Robotic Systems (Cat. No. 94CH3404-1)</i> (IEEE, New York, NY, USA; 1994), pp. 1		
10	U	H. LORENZ, L. PARATTE, R. LUTHIER, N. F. DE ROOIJ AND P. RENUAD, "Low-cost Technology for Multilayer Electroplated Parts Using Laminated Dry Film Resist," <i>8th International Conference on Solid-State Sensors and Actuators and Eurosensors IX Digest of Technical Papers (IEEE Cat. No. 95TH8173)</i> (Found. Sensors & Actuator Technol, Stockholm, Sweden; 1995) pp. 143		
10	V	S. MASSOUD-ANSARI, P.S. MANGAT, J. KLEIN, H. GUCKEL, "A multi-level, LIGA-like Process for Three Dimensional Actuators", <i>The Ninth Annual International Workshop on Micro Electro Mechanical Systems. An Investigation of Micro Structures, Sensors, Actuators, Machines and Systems (Cat. No. 96CH35856)</i> (IEEE, New York, NY, USA; 1996), pp.285		
10	W	O. VLADIMIRSKY, G. CALDERON, Y. VLADIMIRSKY, AND H. MANOHARA, "Thick PMMA Layer Formation as an X-ray Imaging Medium for Micromachining," <i>SPIE</i> 2723:360-371(1996).		
10	X	U. SCHAEDELI, E. TINGUELY, A.J. BLAKENEY, P. FALCIGNO, AND R.R. KUNZ, "Bilayer Resist Approach for 193-nm Lithography," <i>SPIE</i> 2724:344-354(1996).		
10	Y	E.K. PAVELCHEK, J.D. MEADOR, D.J. GUERRERO, J.E. LAMB III, A. KACHE, M. DOCANTO, T.G. ADARNS, D. STARK, AND D. MILLER, "A Highly Absorbing ARC for DUV Lithography," <i>SPIE</i> 2724:692-699(1996).		
10	Z	G. CALDERON, K. MOMS, O. VLADIMIRSKY, AND Y. VLADIMIRSKY, "Multi-level 3-D Patterning of Stacked PMMA Sheets for X-ray Microlithography," <i>SPIE</i> 2880:231-235(1996).		
10	AA	S. MARUO, O. NAKAMURA, AND S. KAWATA, "Three-dimensional Microfabrication with Two-photon-absorbed Photopolymerization," <i>Optics Letters</i> 22(2):132-134(1997).		
10	AB	K. IKUTA, S. MARUO, AND S. KOJIMA, "New Micro Stereo Lithography for Freely Movable 3D Micro Structure - Super IH Process with Submicron Resolution," <i>IEEE Eleventh Annual International Workshop on Micro Electro Mechanical Systems. An Investigation of Micro Structures, Sensors, Actuators, Machines and Systems (Cat. No. 98CH36176)</i> (IEEE, New York, NY, USA; 1998), pp. 290		
10	AC	A. BERTSCH, H. LORENZ, AND P. RENAUD, "Combining Microstereolithography and Thick Resist UV Lithography for 3D Microfabrication," <i>IEEE Eleventh Annual International Workshop on Micro Electro Mechanical Systems. An Investigation of Micro Structures, Sensors, Actuators, Machines and Systems (Cat. No. 98CH36176)</i> (IEEE, New York, NY, USA; 1998), pp. 18		
10	AD	B.H. CUMPTON, J.E. EHRLICH, S.M. KUEBLER, M. LIPSON, S.R. MARDER, D. MCCORD-MAUGHTON, J. W. PERRY, H. ROCKEL, AND M. RUMI, "Three-dimensional Microfabrication Using Two-photon Polymerization," <i>SPIE</i> 3512:168(1998).		
10	AE	M.P. JOSHI, H.E. PUDAVAR, J. SWIATKIEWICZ, AND P.N. PRASAD, "Three-dimensional Optical Circuitry Using Two-photon-assisted Polymerization," <i>Appl. Phys. Lett.</i> 74(2):170-172(1999).		
10	AF	S.M. KUEBLER, M. RUMI, T. WATANABE, K. BRAUN, B.H. CUMPTON, A.A. HEIKAL, L.L. ERSKINE, S. THAYUMANAVAN, S. BARLOW, S.R. MARDER, J.W. PERRY, "Optimizing Two-photon Initiators and Exposure Conditions for Three-dimensional Lithographic Microfabrication," <i>J. of Photopolymer Sci. and Tech.</i> 14(4):657-668(2001).		
10	AG	KILIE A. ROBERT, MICHAEL B. THOMPSON "Finer Features for Functional Microdevices," <i>Nature Vol. 412:697-698(2001)</i>		
Examiner Signature		10/2/03	Date Considered	7/2/03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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